DOCUMENT RESUME

ED 252 774 CG 017 943

AUTHOR Nelson, Gary D.
TITLE Assessment of Health Decision Making Skills of Adolescents.
PUB DATE Nov 84
NOTE 33p.; Paper presented at the Mid-South Educational Research Association (13th; New Orleans, LA, November 14-16, 1984).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Adolescents; *Decision Making Skills; Elementary Secondary Education; Health Education; *Measurement Techniques; *Test Validity
IDENTIFIERS *Health Decision Making Index

ABSTRACT

Although the development of rational decision making skills among school age populations has been identified as a goal of school health education programs, few measurement tools or methods exist to assess such skills. In order to develop an instrument for assessing adolescent health decision-making skills, a preliminary health decision making index was developed, and differences in selected health decision making skills and characteristics of adolescent alcohol users and nonusers were analyzed. The instrument was pilot tested among fifth (N=17) and tenth (N=52) grade students. Results of external peer review of content validity, using Likert and Q-sort techniques, indicated that the instrument appears to be consistent in the skills rated important and not important. The reviews also indicated that evaluating source credibility and accuracy of information, and determining ownership of the problem or decision were skills not adequately represented. Results of the field test showed that the school age subjects had little difficulty responding to the instrument, and that it appears to be capable of detecting developmental differences. (Numerous tables illustrating the results and the Health Decision Making Index are included). (BH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED252774

Assessment of Health Decision Making Skills of Adolescents

Gary D. Nelson

University of Alabama in Birmingham

A paper presented at the Mid-South Educational Research Association

November, 1984

CG 017943

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Gary D. Nelson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ABSTRACT

Assessment of Health Decision Making Skills of Adolescents

The development of rational decision making skills among school age populations has been identified as a seminal goal of school health education programs. However, there is a critical absence of measurement tools/methods based on theoretically sound decision making models. The purpose of this study was to develop instrumentation designed to assess adolescent health decision making skills. The research project was conducted in two stages. First, a preliminary health decision making index was developed in accordance with psychometric theory and research procedures. Second, differences in selected health decision making skills/characteristics of adolescent alcohol users and nonusers were analyzed. Instrument development procedures and preliminary results will be discussed.

Construction of the health decision making index involved the following stepwise sequence: analysis of decision making models and definition of critical decision making skills, review of measurement methods, generation of item pool, expert analysis of instrument format and item sequencing, and field test and analysis of preliminary instrument. The instrument was pilot tested among 69 fifth grade and tenth grade students enrolled in the Alabama public schools.

Results of the instrument analysis indicated that school populations had no difficulty responding to the instrument and the hypothetical problem situation presented. The range of alternative courses of action and potential consequences of those actions have been identified. Male and female fifth and tenth grade subjects differed with regard to type of decisions formulated, reference groups cited, and refusal responses. The range of decisions, perceived benefits of decisions, and methods of maintaining the decision have been identified. Finally, future refinements in the decision making instrument were determined. It is anticipated that the results of this study

and future health decision making measurement methods, will permit the identification of high risk adolescent populations as determined by decision making deficiencies. Health education curricula designed to facilitate rational decision making may be successful in preventing/delaying the onset of problem behaviors.

Assessment of Health Decision Making Skills of Adolescents

Introduction

In 1979, Surgeon General, Julius Richmond, released the report entitled Healthy People (DHEW 79-55071). This report defined the health status of the population according to traditional measures of morbidity, mortality, and disability and described future health priorities. In contrast to the first public health revolution which improved health status by the elimination of unsanitary conditions and better health care, the second public health revolution has focused on the amelioration of the "diseases of affluence"--lifestyle related morbidity and mortality (Fuchs, 1974). Today, chronic diseases have replaced communicable diseases as the leading causes of death. Unfortunately, this "new morbidity" (Healthy People, 1979) which begins early in life is not totally responsive to more and better health care. Therefore, preventing the onset and/or modifying existing health damaging behaviors and lifestyle patterns are health program activities which merit greater public attention and support.

Support for the schools as responsible health promotion/disease prevention agents is widespread (National Center for Health Education, 1980) It has long been argued that because schools have daily contact with youth, these institutions have an important responsibility to promote the health and well-being of children including organized instructional efforts to prevent/modify health damaging behaviors. There is also evidence that public school programs, specifically focused and technically sound health education interventions, may have a favorable impact on behavior and factors such as knowledge, attitudes, beliefs, and skills which predispose young people to health damaging lifestyles (A Compendium of Health Education Programs

Available for Use in Schools, 1982). Consequently, there is greater consensus that the school's commitment to healthy children be something more than rhetoric-the implementation of theoretically sound school health education programs.

According to Green, Kreuter, Partridge and Deeds (1980) health education is "...any combination of learning experiences designed to facilitate voluntary adaptations of behavior conducive to health" (p.7). Facilitating voluntary adaptations of behavior may also imply that learning experiences be designed to effect knowledge, attitudes, beliefs, and skills. Several definitions of health education focus attention on these predisposing, reinforcing, and enabling factors (Health Education, January/February, 1978; School Health Review, November/December, 1973).

Kreuter and Green (1980) identify two appropriate outcomes of school health education activities: "(1) mastery of factual information, and (2) the development of selected skills, the application of which is associated with health enhancing behaviors" (p.233). Kolbe (1982) had indicated that the realistic expectations of school health education include: (1) increased understanding about the philosophy and science of individual health, (2) increased decision making competencies, (3) increased skills and inclinations required to engage in healthy behaviors, (4) elicit healthy beahviors, and (5) increased skills of individuals to maintain and improve health. Finally, Nelson (1982) recommends that the focus of school health education programs be based on giving children information, skills, and experiences that will enable them to intelligently make future health related decisions.

The onset of many health damaging behaviors frequently occurs when young people experience a variety of developmental transitions which make them susceptible to a host of problem behaviors including alcohol use, smoking, illicit drug use, and promiscous sexual activity (Jessor, 1982). At this

stage of development, the choice to participate in health damaging behaviors may be made in the absence of health skills. School health education programs enabling young people to gain competency in those health skills may affect the quality of the decision making process and the ability to prevent and or delay the onset of health damaging behaviors.

This paper describes research efforts currently in progress which address the measurement of decision making skills. This critical task will enable educators to identify and correct decision making deficiencies which may have health damaging consequences.

Background

Decision making is a process of analytical thinking derived from earlier work in the field of economics. Kime, Schlaadt, and Tritsch (1977) define decision making as the "...intellectual process of responding to circumstances by making a selection from alternatives" (p. 126). Iverson (1981) has stated that decision making involves an ability to engage in analystical thinking. Decision making appears to be more than the act of choosing from two or more alternatives; it is a process (Blatz, 1966). The process begins when an individual is confronted with a problem and continues until a solution has been implemented (Dallis and Strasser, 1977).

A number of decision making models have been developed to describe the process of, and prerequisite skills to, rational decision making. Although the decision making models reflect the views of different academic disciplines, the decision making approaches are similar. The common elements of the decision making models described in Figure 1 and Figure 2 include: (1) defining the decision, (2) identifying a range of solutions, (3) evaluating alternatives, (4) evaluating source credibility, (5) evaluating accuracy of information, (6) determining ownership of the problem, (7) maintaining the

position when challenged, (8) reviewing the decision process (9) carrying out the decision, (10) accepting consequences of the decision, and (11) justifying the decision.

There are a variety of factors which effect the decision making process and explain why individuals arrive at different solutions to a problem. Theorists have suggested that differences in intellectual, moral, and social development will influence decisions (Bandura, 1963; Kohlberg, 1966; Piaget, 1950). The importance of a decision and the individual's decision making experience may account for different decisions. Attitudes, beliefs, and values may determine how a decision is made. Finally, social forces may influence the process and outcome of decision making.

De La Sota, Lewis, and Lewis (1980) assert that it is not appropriate to evaluate decision making on the basis of the outcome or decision made. Rather, the quality of the decision making process appears to be the major determinant of one's ability to arrive at an informed rational decision. Given the paucity of information on how to measure decision making, Iverson (1981) recommends the use of criterion referenced instruments which employ case studies and scenarios. Duryea (1980), Hammes (1981), and Nelson (1982) have attempted to evaluate health decision making skills of adolescents by presenting hypothetical problem situations. These research efforts have provided information regarding what young people consider in making a decision. The measurement of decision making skills was not examined.

Efforts to measure decision making would appear to be largely influenced by the following assumptions regarding the theoretical framework of decision making:

Assumption 1: Rational/informed decision making has a favorable impact on health behavior and health status.

Assumption 2: Young people encounter many situations where important health

related decisions must be made.

Assumption 3: With age the type, frequency, and complexity of decisions will change.

Assumption 4: Appropriate models for informed/rational decision making exist.

Assumption 5: Decision making skills of young people can be enhanced.

Assumption 6: Not all decision are rational.

Assumption 7: Developmental differences effect the quality of decision making.

Assumption 8: There are no right or wrong decisions in terms of outcomes. Rather it is the method used to reach the decision which should be evaluated.

Problem

The purpose of this study was to develop instrumentation designed to assess adolescent health decision making skills. The research project was conducted in two stages. First, a preliminary health decision making instrument was developed in accordance with psychometric theory and research procedures. Second, differences in selected health decision making skills/characteristics of alcohol users and nonusers were identified. Development and analysis of the preliminary decision making instrument is the focus of this paper. It is anticipated that the results of this study will enhance the identification of high risk adolescent populations as determined by the accurate measurement of decision making deficiencies.

Methods

The purpose of this study was twofold: (1) development of technically sound instrumentation designed to assess adolescent health decision making skills, and (2) evaluation of the decision making skills/characteristics of adolescent alcohol users and nonusers. The focus of this paper is on the development of the decision making instrument. The analysis of decision making skills will be discussed in subsequent papers. The methods and procedures utilized in the development of the instrument are described in the following section.

The psychometric research literature provides guidelines appropriate for the development of decision making instrumentation. This study utilized methods and procedures recommended by Goode and Holt (1952) and Nunnally (1978). Five general steps suggested by these researchers included: (1) identification of the tenative, logical implications of the problem, (2) definition of the research questions and the parameters of the research problem, (3) selection of appropriate measurement methods, (4) identification of content areas and construction of items with justification, and (5) completion of an external review of the instrument.

A technically sound decision making instrument requires acceptable standards of instrument reliability and validity. In order to evaluate an adolescents health decision making skills, consistent and accurate measurements are essential. Therefore, the following stepwise sequence of procedures were implemented.

Step 1: Determine the need and significance of assessing health related decisions. Identify the perceived contributions of decision making to health behaviors and health status by literature review and discussions with colleagues.

As previously discussed, the research literature indicates that decision making skills are an important predisposing factor in health behavior. The literature is replete with statements citing decision making as a desireable outcome of health programs.

Step 2: Identify the underlying conceptual framework of existing decision making models incluing prerequisite skills/processesses involved in decision making.

A review of the literature provided a limited number of models applicable to health decision making (Figure 1 and Figure 2). The generic decision making activities/skills representative of these models have been previously identified.

Step 3: Operationally define the identified decision making skills and determine relevance/salience of these skills by external review.

Salience of the decision making skills were determined by an external reveiw panel comprised of 16 university faculty and senior level health education students. The review panel asseessed the importance of the decision making skills using the instrument presented in Figure 3.

Step 4: Develop a list of relevant/salient skills which best represents the decision making process and the skills implied. Provide a justification for the selection of the items.

The justification of the decision making skills included the identification of the decision making models which make reference to each skill. Item justification is included in Figure 4.

Step 5: Review existing decision making instruments. Determine if appropriate skills are accurately measured, and the methods used.

The decision making instruments reviewed generally solicit information from subjects regarding their decision making approach to a hypothetical problem rather than the measurement of the subject's decision making skills.

FIGURE 1

DECISION MAKING MODELS

JANIS & MANN (1979)

1. CLARIFY THE DECISION TO BE MADE
2. CONSIDER AVAILABLE ALTERNATIVES
3. OBTAIN NECESSARY FACTS AND INFORMATION
4. CONSIDER THE CONSEQUENCES OF EACH ALTERNATIVE
5. SEEK INFORMATION TO EVALUATE ALTERNATIVES
6. REEXAMINE ALTERNATIVES IN LIGHT OF INFORMATION
7. CHOOSE ALTERNATIVE, ACT IT OUT, ACCEPT CONSEQUENCES

APPLEGATE & EVANS (1979)

1. RECOGNITION OF PROBLEM TO BE RESOLVED OR DECISION TO BE MADE
2. CONSIDER POSITIVE AND NEGATIVE CONSEQUENCES
3. IDENTIFY AND EVALUATE RELEVANT INFORMATION
4. IDENTIFY AND EVALUATE SOURCE OF INFORMATION
5. CONSIDER WIDE RANGE OF INFORMATION
6. ASSESS SALIENCE OF INFORMATION
7. FORMULATE DECISION
8. JUSTIFY DECISION

SIMON & OLDS (1976)

1.	CHOOSING	A. OPTION EXPLORATION
		B. CONSEQUENCE COUNT
		C. FREE CHOICE
2.	CHERISHING	A. ACCENT POSITIVE
		B. PUBLIC AFFIRMATION
3.	ACTING ON BELIEFS	A. VALUE ACTION
		B. PATTERN BUILDING

FIGURE 2

DECISION MAKING MODELS

ROGERS & SHOEMAKER (1971)

1. AWARENESS
2. INTEREST
3. SIMPLIFY
4. SPECIFY
5. RETHINK

DE LA SOTA (1980)

1. PROBLEM DEFINITION
2. SUGGEST SOLUTIONS
3. PREDICT OUTCOMES
4. ANTICIPATE FEELINGS
5. SELECT SOLUTION AND ACT ON IT
6. EVALUATE SOLUTION

BLATZ (1966)

1. MOTIVE
2. GOAL OR INCENTIVE
3. PREPARATION FOR DECISION
4. DECISION
5. ACTION
6. CONSEQUENCES OF ACTION
7. DEALING WITH CONSEQUENCES

FIGURE 3

VALIDATION INSTRUMENT

Directions:

Please rate the importance of each of the following decision making skills as they apply to health decisions frequently made by adolescents. Circle the number that represents the appropriate degree of importance.

		5 Very Important	4 Important	3 Average	2 Low Importance	1 Not Important
1.	Ability to define the problem and/or identify the decision to me made.	5	4	3	2	1
2.	Ability to identify a range of solutions to a problem/or decision.	5	4	3	2	1
3.	Ability to evaluate each alternative solution or choice that could be made.	5	4	3	2	1
4.	Ability to evaluate the credibility of a source.	5	4	3	2	1
5.	Ability to evaluate the accuracy and relevance of information .	5	4	3	2	1
6.	Determining owernship of a problem, i.e., "I", "Me," Others."	5	4	3	2	1
7.	Ability to maintain the decision when challenged.	5	4	3	2	1
8.	Ability to review the process one used to reach the decision.	5	4	3	2	1
9.	Ability to carry out the decision.	5	4	3	2	1
10.	Ability to accept consequences of decision.	5	4	3	2	1
11.	Ability to justify decision.	5	4	3	2	1
12.	Other - (please specify).	5	4	3	2	1

Please rank the above mentioned skills (by number) in order of importance.

Please rank in this order.

#1 Rank
#11 Rank
#2 - 3 Rank
#9 - 10 Rank
#4 - 8 Rank

4

5

9 2

(least 11 6 1 (most
important) important

7

10 3

8

10.

FIGURE 4

Decision Activity	Janis & Mann	Applegate & Evans	Simons & Olds	Rogers & Shoemaker	De La Sota	Blatz
1. Define Decision	X	X	X	X	X	X
2. Identify Solutions	X	X	X	X	X	
3. Evaluate Alternatives	X	X	X	?	?	X
4. Evaluate Source	?	X		?		
5. Evaluate Information	?	X		?		
6. Determine Ownership					X	
7. Maintain Position						
8. Review Decision	X			X		
9. Carry out decision	X		X	X		X
10. Accept Consequences	X		X			X
11. Justify Decision		X				

11.

Utilization of the decision making process and skill proficiency appears to be the logical approach to the evaluation of decision making.

Step 6: Select a measurement method following discussions with experts in the field.

The measurement of decision making will be approached through the use of hypothetical problem situations which request students to identify a decision making process and apply selected skills.

Step 7: Identify life experiences/situations where identified skills are used or should be used.

The onset of many health enhancing and health damaging behaviors is believed to be preceded by the decision making process. Alcohol consumption is one health behavior where the use of decision making skills should be used.

Step 8: Assemble preliminary instrument (Figure 5). Item sequencing, question groupings, and instrument instructions were determined.

Step 9: Field test and revise preliminary instrument. Field test the decision making instrument among colleagues for readability, clarity, and completion time. Following revisions, field test instrument with a convenience sample of the target population.

The convenience sample of the pilot study consisted of 52 tenth grade students and 17 fifth grade students enrolled in the Jefferson County School District. These subjects were also the recipients of classroom health instruction. Fifth and tenth grade students were selected to insure that the instrument was sensitive to developmental differences.

Step 10: Complete instrument analysis.

Step 11: Revise instrument in consultation with psychometric experts.

Figure 5

Health Decision Making Index

Please circle the correct response

Your age 10 11 12 13 14 15 16 17 18 19+

Sex Male Female

Grade 5 6 7 8 9 10 11 12

Directions: Please read the following situation and anwser each question in the space provided.

Jenny and Mike are ninth grade students in a local school. Jenny and Mike do not smoke cigarettes. However both Jenny and Mike have close personal friends who smoke.

Lately, Jenny and Mike have been offered cigarettes by their friends. They have even been pressured to smoke. They do not want to smoke cigarettes, but they still like their friends.

Questions #1 Who should make the decision?

_____ 1. Jenny and Mike should make their own decision.

_____ 2. Jenny and Mike should ask others to help them make the decision.

_____ 3. Jenny and Mike should let others make the decision for them.

Question #2 What kinds of choices can Jenny and Mike make?

Choice #1_____

Choice #2_____

Choice #3_____

Choice #4_____

Choice #5_____

Question #3 What would the benefits of each choice be?

Choice #1_____

Choice #2_____

Choice #3_____

Choice #4_____

Choice #5_____

Question #4 What decision would you make? Choice #_____

Question #5 Where could Jenny and Mike go for information?

_____

_____

Question #6 Who should Jenny and Mike ask for help?

_____

_____

Question #7 How would Jenny and Mike know if they made the right decision?

_____

_____

Question #8 Listed below are a variety of things Jenny and Mike could say to their friends which would keep them from being persuaded to smoke.

Directions: Circle the number of the 3 best responses.

WAYS YOU CAN RESPOND TO PEER PRESSURE

1. "I don't want to smoke."
2. "I refuse to smoke."
3. "I'd tell them to lay off."
4. "I don't care to smoke."
5. "Don't ask me for cigarettes."
6. "I hate smoking."
7. "I would turn them down."
8. "You keep them, you might need them."
9. "Tell them you do not condemn them."
10. "I don't want to try."
11. "Smoking does not appeal to me."
12. "Not now."
13. "If you want to smoke go ahead."
14. "I don't mind if you smoke."
15. "It is bad for your health."
16. "Are you going to smoke?"
17. "My parents would kill me."
18. "Maybe later."
19. "Smoking causes health problems."
20. "I wish you wouldn't smoke."
21. "Some other time."
22. "I don't smoke."
23. "Cigarettes make me sick."
24. "I'd tell them to leave me alone."
25. "No."
26. "I would decline it."
27. "Please keep the cigarettes away from me."
28. "I choose not to smoke."
29. "If you are really my friend you wouldn't ask me to smoke."
30. "If you want to be my friend - you'll have to quit."
31. "I value my health - smoking will harm me."
32. "Do you think I should do what they want me to do?"
33. "Explain to them that smoking is not good."
34. "Please don't smoke around me it really bothers me."
35. "I don't think that cigarettes are good for me, and I on't wish to smoke."
36. "I hope you understand why I don't smoke."
37. "I don't like the idea of smoking, it wouldn't make me look cool."

Question #9 Rank order the three responses which you circled:

Best Response_____

Second Best Response_____

Third Best Response_____

Question #10 Do you intend to use the best, second best, or third best responses if ever pressured to do something you were unsure about or did not want to do?

Yes_____ No_____ Maybe_____

Results

Results of the study are presented in two parts. First, the analysis of the content validity of the decision making instrument is reported. Second, the results of the decision making field test are discussed.

One of the principal aims of this study was to develop a technically sound instrument designed to assess adolescent health decision making skills. The instrument presented in Figure 5 represents a concerted effort to apply the common elements of the decision making process to a health decision making instrument. The instrument appears to have face validity as determined by the instrument development process employed.

Content validity refers to extent to which the instrument represents the skills or items which should be measured. An external peer/expert review determined the importance of the decision making skills using a five point likert scale. In addition, the skills were also ranked using the Q-sort Technique in order to determine the relative importance of each skill. Table 1 results identify the mean score as well as rankings of the decision ;making skills. Both measures appear to be consistent with regard to skills rated/ranked as important and not important.

A separate and additional external review group evaluated the preliminary instrument for utilization/application of the identified decision making skills. Members of the external review were asked to review the instrument and indicate whether or not each decision making skill was adequately covered. The results of the external review are reported in Table 2. The reviewers indicated that the following skills were not adequately covered: evaluating source credibility, evaluating accuracy of information, and determining ownership of the problem or decision.

Analysis of the instrument in terms of predictive, concurrent, and construct validity was not performed. Further modifications will be necessary

Table 1
Peer Review of Skills

Skill	Grand Mean	Ranking
1. Defining the problem	4.87	1
2. Carrying out the decision	4.68	2
3. Evaluating alternatives	4.37	3
4. Identifying alternatives	4.25	4
5. Maintain the position	4.25	5
6. Accept consequences	4.25	6
7. Evaluate source credibility	4.18	7
8. Determining Ownership	4.12	8
9. Evaluating Accuracy of information	4.06	9
10. Justifying the Decision	4.05	10
11. Review the decision	3.5	11

Table 2

Item Justification

Decision Activity	Yes	No	Uncertain
1. Define Decision	.77	.05	.18
2. Identify Solution	1.00	.00	.00
3. Evaluate Alternatives	.91	.00	.09
4. Evaluate Source	.55	.18	.27
5. Evaluate Information	.77	.13	.10
6. Determine Ownership	.50	.23	.27
7. Maintain Position	.60	.13	.27
8. Review Decision	.86	.05	.09
9. Carry out decision	.82	.05	.14
10. Accept Consequences	.73	.10	.18
11. Justify Decision	.77	.05	.18

in order to determine instrument reliability.

The instrument was field tested among 17 fifth grade and 52 tenth grade students enrolled in the Jefferson County Alabama School District. This convenience sample was selected on the basis of prior working relationships with the cooperating teachers as well as the existence of a health program in the classroom. In addition to the quantitative data collected, students were asked to comment on the readability, objectivity, and appropriateness of the instrument and problem situation presented. The decision making instrument required approximately 20 minutes to administer. Student responses to the instrument were anonymous.

Results of the field test will be reported in terms of respondent characteristics (Table 3), type of decision formulated (Table 4), range of decisions identified (Table 5), benefits of the decision (Table 6), source of information (Table 7), and refusal skills (Table 8). The distribution of subjects by age and sex are reported in Table 3.

Question 1 asked students to identify who should make the decision. The chi-square two way classification revealed significant differences, (X^2=14.20, $p < .001$), between fifth and tenth grade frequency of Type I and Type II decisions (Table 4). Question 2 asked student to identify the kinds of choices that could be made in the hypothetical situation. A Friedman Analysis of Variance by ranks revealed significant differences (X^2=7.69, $p< .005$) between fifth and tenth grade subject responses (Table 5). Question 3 required students to identify the benefits of the decisions cited (Table 6). Significant differences (X^2=6.231, $p< .0123$) were found between fifth and tenth grade rankings of benefits. Questions 5 and 6 were combined to determine subject assessments of source credibility and source accuracy (Table 7). Fifth grade subjects cited significantly fewer sources than tenth grade subjects. Results in Table 8 indicate that significant grade and sex

Table 3
Respondent Characteristics

	AGE				
	10	11	15	16	17
Male	7	2	5	23	4
Female	3	3	0	18	2

Table 4
Type of Decision

	Male		Female		
	Fifth	Tenth	Fifth	Tenth	X^2
Type I= Me	5	32	4	19	14.20*
Type II= Us	4	0	2	1	
Type III= Others	0	0	0	0	

*$p < .001$

Table 5
Decisions

Decisions	Male		Female		χ^2
	Fifth	Tenth	Fifth	Tenth	
1. Get more information	00	01	00	02	7.692
2. Say "no" & Don't Smoke	05	48	05	24	
3. Avoid friends	03	15	03	08	
4. Do what is right	02	02	00	01	
5. Experiment	00	04	00	02	
6. Avoid Pressure	01	01	01	01	
7. Educate Friends	02	10	02	07	
8. Pray	00	01	00	00	
9. Fake it	00	01	00	01	
10. Tell Parents	03	01	03	02	
11. Get Opinions	00	02	01	02	
12. Delay	00	02	00	00	
13. Smoke	00	26	00	13	

$p < .005$

Table 6
Benefits

Benefit	Male		Female		X^2
	Fifth	Tenth	Fifth	Tenth	
1. Health	05	28	04	14	6.231
2. Friendship	01	21	00	18	
3. Self-respect	01	05	00	06	
4. No pressure	01	17	00	10	
5. Help friends	02	08	01	06	
6. Enjoy friends	01	01	00	00	
7. Enjoy taste	00	00	02	00	
8. Aesthetics	00	02	01	00	
9. None	00	00	00	00	
10. Don't get caught	01	03	00	01	
11. Learn about smoking	00	03	00	07	
12. Learn what's right	00	01	00	00	
13. Avoid Smoking	00	01	00	00	

$p < .0123$

Table 7
Source Credibility

Source	Male		Female	
	Fifth	Tenth	Fifth	Tenth
1. Doctor	04	06	01	02
2. Friend/Peer	00	12	00	08
3. Parents	09	21	06	14
4. Counselor	00	01	00	03
5. Teacher	00	03	00	04
6. Sibling	00	01	00	03
7. Government	00	02	00	00
8. Relatives	00	02	00	01
9. Smoker	00	04	00	00
10. Pastor/Clergy	00	01	00	03
11. Medical Personnel	00	00	00	01

Table 8
Refusal Skills

Skill	Male		Female		X^2
	Fifth	Tenth	Fifth	Tenth	
1. Refuse	04	44	06	25	12.266*
2. Sophisticated Response	06	18	03	12	4.858**
3. Attitude/ Excuse	06	12	05	09	
4. Counter Response Recommendation Request	00	06	01	06	
5. Consequences	10	07	00	05	
6. Delay	00	06	00	00	

*Grade, $p < .05$
**Sex, $p < .05$

differences were found regarding the type and frequency of refusal skills cited (Grade, $p < .05$, Sex, $p < .05$). Refusal skills cited in question 8 included: "refusal," "Sophisticated Response," "Excuse," "Counter Response," "Consequences," and "Delay."

Conclusions

The purpose of this study was to develop instrumentation designed to assess adolescent health decision making skills. The findings of this study were:

1. Theoretical models of decision making can be applied to health behaviors.
2. The decision making process and selected skills can be defined and measured.
3. School age subject had little difficluty responding to an instrument which utilized a hypothetical problem situation.
4. Existing decision making models appear to be incomplete.
5. The present instrument does not identify optimal levels of skill proficiency.
6. The preliminary decision making instrument appears to have strong face and content validity.
7. The decision making instrument is written at an appropriate level.
8. The decision making instrument appears to be capable of detecting developmental differences between subjects.

References

Applegate, T. P., Evans, W.K, (1978).. Making Rational Decisions. Salt Lake City: Concept Development, Inc.

A Compendium of Health Education Programs Available for Use in Schools, (1982). Center for Health Promotion and Education, Centers for Disease Control, Atlanta, Georgia.

Bandura, A., Walters, R. (1963). Social Learning and Personality Development. New York: Holt.

Duryea, P.J.E. (1979) Psychosocial factors children perceive as prominent in smoking decisions. Unpublished Master's Thesis. University of Utah.

Fuchs, V. R. (1974) Who Shall Live. New York: Basic Books.

Goode, W. J., Holt, P.K. (1952). Methods in Social Research. New York: McGraw Hill.

Green, L.W., Kreuter, M.W.,Partridge, K., and Deeds, S. (1979). Health Education Planning: A Diagnostic Approach. Palo Alto, California: Mayfield Publishing Company.

Hammes, M.J., (1981) Decision Making Skills Utilized in Resistance to Persuasion Among Sixth Grade Students. Unpublished doctoral dissertation, University of Utah.

Health Education. (1978). January/February, p.25-33.

Inverson, D., (1981). Application of Decision Making Theories to Health Education Programs. Unpublished Manuscript. (Available from D. Iverson, National Cancer Institute).

Janis, I.L., Mann, L. (1977). Decision Making. New York: The Free Press.

Jessor, R. (1983) Problem behavior and developmental transition in adolescence. Journal of School Health. 52, (5) p295-300.

Kime, R. E., Schlaadt, R. G., Tritsch, L.E., (1977). Health Instruction: an Action Approach. New Jersey: Prentice Hall.

Kohlberg, L. (1966). Cognitive stages in preschool education. Human Development, 9, p5-17.

Kolbe, L.J., (1983). What can we expect from school health education. Journal of School Health, 52 (3), p145-150.

Kreuter, M.W., Green, L.W., (1978) Evaluating school health education: Identifying purpose, keeping perspective, Journal of School Health. April, p 223-225.

National Center For Health Education. (1980). A compilation of Organizational Statements in Support of School Health Education.

Nelson, G.D., (1982). The effects of a smoking education risk reduction program on selected student impact variables. Doctoral Dissertation, University of Utah.

Nunnally, J.C. (1978). Psychometric Theory. New York: McGraw-Hill Book Company.

Piaget, J. (1950) The psychology of intelligence. London: Routledge and Kegan Paul, LTD.

Rogers, E.M., Shoemaker, F.F. (1971). Communication of Innovations, New York: The Free Press.

School Health Review. (1973). 4 (6), p. 28-30.

U.S. Department of Health, Education, and Welfare. (1979) Healthy People, The Surgeon General's Report on Health Promotion and Disease Prevention, DHEW Publication No. (DHS) 79-55071.